MACQUARIE
University

Information Technology

UNDERGRADUATE COURSES

2017

We are the Department of Computing. Welcome.

We know a degree should be about more than what you learn in the classroom. After all, we're the university for the well-rounded explorer. We offer a broad range of programs from cyber security to web design for the modern IT type, but we also get you out there, in the real world, for the training that really matters. Our degrees are designed alongside industry with a major project during your final year in our Professional and Community Engagement (PACE) unit which gets you into the modern workplace for the real-world training.

Our world is changing and we'll put you right there at the cusp of it. So let's begin.

PROFESSIONAL ACCREDITATION

All of our world-class programs are currently either accredited or are in the process of being accredited by the Australian Computing Society (ACS). This means they all satisfy the requirements of the Information Communication Technologies (ICT) profession. The ACS accreditation provides international recognition of equivalent professional preparation for graduates in the ICT.

INDUSTRY PARTNERSHIPS

Location is everything; we're located quite conveniently in the hub of Sydney's IT industry in North Ryde. Many of our industry partners are located here and they play an integral role in the final year projects of all our degrees.

CAREER OPTIONS

Computer science/IT graduates routinely appear in lists about the most in demand and most employable. Depending on your choice of degree and/or major, your options include:

- big data
- business analyst
- business manager
- business information analyst
- cyber security specialist
- data analyst
- data engineer
- data modeller
- data scientist
- database administrator
- games designer
- games developer
- information systems administrator
- IT consultant
- IT project manager
- network administrator
- software developer
- software engineer
- system architect
- web administrator
- web developer.

PACE: PROFESSIONAL AND COMMUNITY ENGAGEMENT

Our PACE unit ISYS358 - Business Information Systems Project gives students the opportunity to engage with industry and community partners. By applying classroom learning to real world contexts, students can develop valuable career skills, and contribute to mutually beneficial outcomes before they graduate. Working in groups on real projects submitted by our partner organisations, students gain real life work experiences while being supported academically.

RICHARD MAROON
BACHELOR OF SCIENCE MAJORING IN BUSINESS INFORMATION SYSTEMS
PACE STUDENT, MACQUARIE UNIVERSITY

"Through the PACE unit ISYS358 students will gain firsthand experience of working in an agile Systems Development Life Cycle (SDLC) involving producing project documentation and developing the system that has constrained deadlines. While it may be stressful to work to meet those deadlines, I guarantee that this is one of the best experiences you will have during your degree."

Undergraduate courses

BACHELOR OF INFORMATION TECHNOLOGY

Depending on the major you choose, you will develop IT skills to build and use information systems, build client-server web applications, or manage data.

Key features

- Choose one of five majors: Cyber Security, Data Science, Information Systems & Business Analysis, Software Technology, or Web Design and Development.
- A major project in your final year with our industry partners, providing the opportunity to put your theory into practice in a software development life cycle.
- Learn how to handle low-level implementation issues and complete a high-level analysis of your client's needs.

75.00 Previous year's ATAR cut-off | 300503 UAC code.

MAJORS

CYBER SECURITY
Macquarie's Cyber Security major provides you with the knowledge you need to create an effective cyber security environment for commercial, private and industrial applications. It combines units from the Department of Computing with those from Security Studies and Criminology to give students practical insights into technology risks and countermeasures and the role that security management plays in the bigger picture of cyber governance.

DATA SCIENCE
Data Science is changing forever how decisions are made across all the fields of our societies. This Major combines the multidisciplinary skills required by Data Scientists to make the most of Big Data. These include the ability to deal with an incredible volume and variety of data as well as being able to analyse data and uncover patterns by applying statistical models, machine learning and visualisation techniques in order to inform decision makers.

INFORMATION SYSTEMS AND BUSINESS ANALYSIS
This major provides a solid understanding of information systems concepts and issues, enabling you to fully participate in the increasingly globalised business community. Knowledge of information systems requires strong analytical and critical thinking skills to thrive in a competitive global environment.

SOFTWARE TECHNOLOGY
Software technology is about building and using systems for productive and leisure activities as well as understanding the fundamental principles that underlie such systems.
This major focuses on studying algorithms, data structures and the principles of building quality software.

WEB DESIGN AND DEVELOPMENT
Sound training in the latest web technologies that are relevant to build client-server web applications. It provides insight into state-of-the-art web design practice and addresses emerging topics such as cloud-computing or the web as a big-data platform.

BACHELOR OF INFORMATION TECHNOLOGY – GAMES DESIGN AND DEVELOPMENT

Provides thorough grounding in software design and development, equivalent to the Software Technology major of the standard Bachelor of Information Technology. It includes specialist units in video games. Some of these cover practical applications of information technology development skills to game development projects whilst others provide a critical approach to video games as designs and cultural media products. students.

Key features
- Study all aspects of video games – design, development and appreciation – while gaining broad programming and software engineering skills and knowledge.
- Undertake a project with an industry partner in your final year. This allows you to put theory into practise and form a portfolio that can be shown to potential employers.

77.00 Previous year's ATAR cut-off | 300504 UAC code.

BACHELOR OF DIGITAL BUSINESS
Digital business is an exciting and lucrative element of commerce. People the world over are browsing, buying and selling, exchanging information and conducting research at breakneck speed. This is digital business at work. This interdisciplinary course qualifies you for a wide range of careers in digital business as you'll gain skills in both information technology and business.

Key features

- Develop skills in entrepreneurship, programming, information systems, computer management, networks and web technology,
- Undertake a project in entrepreneurship with an industry partner in your final year. This will allow you to learn how to identify successful business models and strategies and be part of a team that will deliver a substantial software product.

85.00 Previous year's ATAR cut-off | 300496 UAC code

BACHELOR OF ADVANCED SCIENCE WITH A SPECIALISATION IN SOFTWARE TECHNOLOGY

For gifted and talented students, this elite program has a strong research focus, with the flexibility of a Bachelor of Science; plus advanced units that are not available to other students. Gain practical experience working in research laboratories and attend research-focused seminars with academic and research staff, exposing you to cutting-edge research. You will benefit from special advanced units not available to other students.

Key features
- Student numbers are restricted, allowing personal attention including an academic mentor throughout the degree and direct contact with researchers.
- Opportunity to take part in research and gain practical experience in research laboratories and research groups.
- A project within one of the research centres in the Department of Computing in your final year.

96.00 Previous year's ATAR cut-off | 300543 UAC code.

Introducing some of our academic staff and graduates

BLAIR HUDSON
GRADUATE, BACHELOR OF INFORMATION TECHNOLOGY MACQUARIE UNIVERSITY

"There remains a lot of untapped potential in IT, especially around big data. I want to help use this potential to help solve the world's problems and make a difference. I attended Macquarie University from January 2010 to December 2013 and graduated with a Bachelor of Information Technology.

Aside from technical skills, teamwork was the biggest skill that Macquarie helped me to develop. Being able to work both independently and in a team environment is essential for my career. The best thing about Macquarie is the intelligent and friendly academic teaching staff. My degree was the key qualification needed to start working in IT."

ANNABELLE MACFARLANE
GRADUATE, BACHELOR OF INFORMATION TECHNOLOGY - GAMES DESIGN AND DEVELOPMENT MACQUARIE UNIVERSITY

"I have always been passionate about video games and enjoyed creating visual worlds using graphic design and creative writing. Being able to create these worlds through video games is what drew me to study the Bachelor of Information Technology - Games Design and Development. I chose to study at Macquarie because when I came to the Open Day I loved the atmosphere and everyone was so open and friendly. What I have really enjoyed in my studies is using a program called Unity to create our own level designs. I have also enjoyed learning how to critically analyse games. Although I have to work hard at my studies it is very rewarding and sometimes playing a game can be your homework! "

REMA LOLAS
GRADUATE, INFORMATION TECHNOLOGY MACQUARIE UNIVERSITY

"From an early age I have had a keen interest for technology. When at Macquarie, I really enjoyed Software Engineering; from the human aspect of understanding a problem and user requirements to designing and building a program that improved the way things were done. This has become my passion and a theme throughout my career. My degree offered the flexibility to complete both IT and business subjects that allowed me to develop skills and knowledge that would be leveraged in the "real world"… and exactly that I did! While I have never actually programmed professionally, the skills and business and technology understanding taught at Macquarie have provided a strong foundation that combined with hard work has helped me achieve success in the technology industry working for software and hardware resellers in Australia to a large technology company in Silicon Valley. Studying at Macquarie was a great experience from the location, the beautiful campus, the friendly atmosphere and the ability to get involved in fun and memorable events such as Inception Day and Uni Games."

PROF. MICHAEL SHENG
HEAD OF DEPARTMENT OF COMPUTING MACQUARIE UNIVERSITY

After 10 years successful career at School of Computer Science, the University of Adelaide, Prof. Michael Sheng became Head of Department of Computing at Macquarie University in 2017, bringing an ambitious vision and agenda to make Macquarie among the best in computing in Australia.

Prof. Sheng holds a PhD in computer science from the University of New South Wales and did his Post-Doc at CSIRO ICT Centre. Prof. Michael Sheng's research interests include Internet of Things, Big Data Analytics, Service-Oriented Computing, and Social Computing. He has more than 280 publications in leading international journals and conferences.

Prof. Michael Sheng's research has been widely cited by his international peers. He is listed as one of the "Top Most Cited Authors" in the World Wide Web research area by Microsoft Academic (ranked 133 out of 36,942 authors, top 0.2%). Prof. Michael Sheng is the recipient of a number of prestigious awards including Chris Wallace Award for Outstanding Research Contribution (2012), ARC Future Fellowship (2014), and Microsoft Research Fellowship (2003).

FIND OUT MORE
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To find out more about the undergraduate programs in this brochure, visit:
courses.mq.edu.au

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